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THE UNIVERSITY OF ALBERTA
RIGIDITY AND SET IN SECOND LANGUAGE
ACQUISITION

BY
SURENDER SINGH SODHI



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The undersigned certify that they have read,
and recommend to the Faculty of Graduate Studies for
acceptance, a thesis entitled, "Rigidity and Set
in Second Language Acquisition," submitted by Surender
Singh Sodhi in partial fulfilment of the requirements
for the degree of Doctor of Philosophy.

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ABSTRACT

Good and poor second language learners were examined on indices of flexibility-rigidity, set fixation and extinction, and orientation.

One hundred sixty students enrolled in an introductory educational psychology course at the University of Alberta were selected as subjects when they met the criteria of having had no French language background prior to high school, and had studied this language only during the three years of the Alberta senior high school program.

The good and poor second language learners were identified by comparing the normalized total scores which the students obtained on the reading and listening comprehension tests taken from the French form of Modern Language Association Cooperative Foreign Language Test, with the normalized scores they obtained on the School and College Ability Test (SCAT). The good second language learner was designated as one whose normalized total score on the French reading and listening comprehension tests was at least five points higher than his normalized score on the SCAT; the poor second language learner was designated as one whose normalized total score on the French reading and listening comprehension

tests was at least five points lower.

The hypothesis was that good second language learners differ significantly from poor second language learners on the measures of flexibility-rigidity, set fixation and extinction, and their orientation to the study of the second language.

The findings of the study were as follows:

(1) The mean scores obtained by good and poor second language learners on the California F-Scale and on the Gough Sanford Rigidity Scale were significantly different, $p < .05$.

(2) There was no difference between the number of trials needed by the good and poor second language learners for fixating set in the haptic modality (Uznadze's method), $p > .05$, but there was a significant difference on the number of trials needed for extinguishing set. The good as compared to poor learners extinguish set in fewer trials, $p < .05$.

(3) Good second language learners were characterized by an integrative orientation to the second language learning; whereas, the poor second language learners exhibited an instrumental orientation, $\chi^2 = 7.4$ which was significant at .01 level. Nevertheless, fifteen of forty good second language learners were instrumentally oriented and thirteen of forty poor learners were

integratively oriented. This indicated that for these individuals other variables were operating in second language learning.

(4) There was no significant difference between good and poor second language learners on the Canadian version of Rokeach's Opinionation Scale, $p > .05$. The correlations between the California F-Scale scores and the Gough Sanford Rigidity Scale scores; the California F-Scale scores and Canadian version of Rokeach's Opinionation scale scores for good and poor second language learners differed significantly, $p < .05$. This indicated that these scales were better predictors of the poor second language learners than they were of the good second language learners.

The interpretations of these findings are limited by the ex post facto nature of this investigation. The learning of the second language in high school may have had some influence on the orientations and attitudes of the students. An investigation which identifies the characteristics of students prior to their beginning of the study of the second language should be considered. Also, it should be noted that in this study, the more active forms of second language expressions were not tested. However, success in second language learning is related to the cultural orientation of the group in which the individual lives, and to the basic personality structure of the learner.

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CHAPTER I

STATEMENT OF THE PROBLEM

In this study the writer is concerned with the examination of personality variables, particularly with measures of flexibility-rigidity and with set fixation and extinction among students who differed in their learning of a second language, namely French. Students who differ on the dimension of flexibility-rigidity, a correlate of ethnocentrism (Rokeach, 1960), may be expected to differ also in their performance in acquiring a second language. Also, because second language learning may be viewed as the establishment of a set (Imedadze, 1967), the student mode of set acquisition can be a significant variable in the learning of another language.

Background

Researchers have offered various explanations for individual differences in the acquisition of a second language (Ervin and Osgood, 1954; Carrol, 1960, 1965; Belyayev, 1963; Vildomec, 1963; Vygotsky, 1966), but with the exception of Lambert (1963, 1967), they have overlooked social-psychological and personality variables. Gardner and Lambert (1959), Gardner (1960), Anisfeld and Lambert (1961), Lambert (1963, 1967) report that the learner's orientation to the second language, his

attitudes toward the other group and his ethnocentrism are important factors in his success in learning the new language.

The orientation can be either of the integrative or of the instrumental type. The integrative orientation denotes the desire to learn more about the other cultural community whereas the instrumental orientation reflects the utilitarian value of studying the other language (Lambert, 1963). Attitudinal differences appear to be associated with achievement in second language. Students who rated themselves reasonably bilingual obtained significantly lower scores on a measure of ethnocentrism, the California F-scale, than did the students who rated themselves relatively monolingual (Lambert, Hodgson, Gardner, and Fillenbaum, 1960). Adults voluntarily enrolled in senior French classes in night school tended to receive lower F-scale scores than did adults in an elementary French course (Gardner, 1958). As the F-scale purports to measure authoritarian attitudes, including a disposition towards holding ethnic prejudices, it may be inferred that flexibility-rigidity, a basic personality dimension (Rubenowitz, 1963), may be significantly associated with success in second language acquisition.

The psychologists in the Uznadze tradition conceive the integral subject of personality as the set which

disposes an individual to behave or respond in a particular direction (Prangishvili, 1966; Uznadze, 1967). Set is conceived as a substratum providing the basis for integration and organization of all psychic processes and behaviour. All psychic processes, such as thought, speech and language arise as subsets of this substratum. Set can be conceived as a mediating construct, a state which determines the direction of focussing as well as the way in which information will be processed. Therefore, set and the affective personality dimension of flexibility-rigidity discussed earlier, because they dispose the individual to respond in a particular manner, may also be important factors in second language learning.

For the present study, the investigator plans to identify those students enrolled in the introductory educational psychology course at the University of Alberta, who had no French language background before high school and studied French only for three years in high school. These students will be given reading and listening comprehension tests of the French form of the Modern Language Association Cooperative Foreign Language test (Buros, 1965). The normalized scores the students obtain on this test will be compared with their standing on the School and College Ability Test (SCAT) to identify

good second language learners and poor second language learners. The good second language learners are taken to be those whose normalized scores on the French test are at least five points higher than their normalized score on the SCAT; the poor second language learners are taken to be those whose normalized score on the French test are at least five points lower.

The good and poor second language learners are to be compared on the following personality measures:

- (1) Integrative-instrumental orientation
(Lambert, 1963).
- (2) California F-scale (Adorno, et al., 1950).
- (3) Gough-Sanford Rigidity Scale (Rokeach, 1960).
- (4) Opinionation Scale, Canadian version (Peters, 1961).
- (5) Uznadze's sphere method for set fixation and set extinction in the haptic modality
(Uznadze, 1967).

Hypothesis

The good second language learners in comparison with the poor second language learners are expected to be integratively oriented to second language learning and to score lower on measures of ethnocentrism, social rigidity and opinionation. Also, they are expected to fixate and extinguish set more readily on Uznadze's

sphere method for fixating set in the haptic modality.

Previous research has concentrated on skill acquisition based on audio-lingual habit theory, although Osgood (1957) has developed some testable constructs in the area of cognitive code theory; the emphasis in this latter case is on mediational processes.

The concept that learning another language has deeper roots in both the cultural orientation of the group in which the individual lives (Lambert, 1963, 1967), and the basic personality structure of the learner has many implications for curriculum planners and second language teachers. It is important therefore to investigate the relationship between personality variables and success in second language learning.

Better understanding of this relationship may enable us to improve the teaching of the second language.

CHAPTER II

RELATED LITERATURE

A. SOCIAL-PSYCHOLOGICAL THEORY OF SECOND LANGUAGE LEARNING

Lambert (1967) believes that the students' attitude towards the culture associated with the language he is learning is the crucial factor influencing his effective learning of that language. This theory of second language learning is the result of a series of studies carried out by W. E. Lambert and associates at McGill University. Lambert comments:

The development of bilingual skill very likely involves something more than a special set of aptitudes because one would expect that various social attitudes and motives are intimately involved in learning a foreign language (Lambert, 1967, p. 91).

For example, he found that those persons with the most favorable attitude towards a given group, experienced the least amount of difficulty in learning their language. A group in Maine, in comparison with one in Louisiana, had the more favorable attitude towards Franco-American heritage and, as a result, were the ones more proficient in French (Lambert, 1963, p. 118). In contrast it was found that in Louisiana, where the attitude towards French was much more negative than in Maine, French was surviving far less well.

He also discovered that persons of a bilingual or bicultural heritage tended to remain identified with one culture or the other or else to be alienated from both. However, those who became bilingual were less prejudiced than those who did not and tended to maintain a more favorable attitude towards both groups. When dominance of one or another of the bilingual languages was found it was believed that this was due to a more favorable attitude towards that cultural group. This difference can be accounted for in terms of how one learns one's first language. Lambert (1963) found that, as in the learning of a first language, learning of a second language is strongly influenced by the significant persons in one's life. He adds: "Language learning is motivated by a basic desire to be like valued people in one's environment (Lambert, 1963, p. 115)."

Lambert agrees with Mowrer (1960) regarding the autistic theory of language learning. For Mowrer, word learning in children takes place when the sound of words have come to carry a reinforcement power in themselves, so that the learner wants to produce the words. The sounds become reinforcing agents through association with words used by those who are held in affection by the learner. A successful learner has to identify with the speakers of a language to the extent that he wants to be like them linguistically. Similarly the learner

of a second language must desire to identify with members of the other linguistic-cultural group and be willing to take on even subtle aspects of their behaviour, including their language and style of speech.

Lambert divides desire to learn a second language into two types of orientation.

Instrumental Orientation -- Instrumental orientation is characterized by the utilitarian value of linguistic achievement such as getting credits for high school diploma or getting ahead in one's occupation.

Integrative Orientation -- Integrative orientation is characterized by the desire to learn more about the other cultural community.

Lambert (1963) proposes an orientation index to find the orientation a person has toward learning a second language. Subjects are presented with eight alternative reasons typically given for studying French, and asked to indicate the one or more which best describes their reasons for studying the language. The alternatives are:

- (1) Usefulness in work situations.
- (2) Enables one to gain friends more easily among French speaking people.
- (3) Because no one is really educated unless he is fluent in the French language.

- (4) To better understand the French way of life.
- (5) One needs a good knowledge of at least one foreign language to merit social recognition.
- (6) Because I hope to live in France one day.
- (7) I need the training in French for college credits.
- (8) To enable me to begin to think and behave as the French do.
- (9) Any other personal reason.

Alternative (9) is supplied in case an individual thought the alternatives given were inadequate. Those choosing alternatives (1), (3), (5), or (7) are classified as instrumentally oriented in their approach to language learning. Those choosing alternatives (2), (4), (6) or (8) are classified as integratively oriented. If odd and even alternatives are chosen then the subject is interviewed and the responses are classified by two judges. Responses to alternative (9) are classified by two judges as instrumental or integrative if both judges agree (Lambert, 1963).

The concept of integrative motive implies that successful second language acquisition depends upon a willingness to be liked and to be valued by members of the 'other' language community. The relevance of identification in the second-language learning situation has become evident in recent years. Ervin (1954), for

example, argues that "the social and psychological incitements to imitation and to identification may account for some of the marked individual differences in linguistic attainment (Ervin, 1954, p. 10)." Politzer (1953) found that a greater portion of students getting "A" grades in college language courses showed greater interest in the people, culture and literature than did those students obtaining failing grades. This would appear to indicate that identification is related to second language learning even in the classroom situation. Whyte and Holmbert (1956, p. 13) found evidence for a factor of identification among Americans who successfully learned Spanish while working in Latin America. Those workers who believed that they shared physical attributes with the Latin Americans, who showed a willingness and even a desire to meet with them on a plane of social equality, learned the language, and became much more fluent than workers who could not or would not make this identification.

A case history cited by Nida (1956) illustrates the influence of identification in second language achievement. In this case history it was shown that a strong desire to be integrated into a particular linguistic group can hinder the acquisition of the language of yet another group. He describes the case of a missionary who had extreme difficulty in acquiring a usable level

of foreign language proficiency despite good teachers, a great deal of effort, and intelligence. Analysis of his personal history indicated that his parents had emigrated to the United States, and that as a boy he had dissociated himself from the cultural background of his parents and insisted on always speaking English. His desire for integration with the American culture was so intense that he denied knowing the parent language. Nida suggests that because of his extreme identification with English, the missionary was never able to overcome his intense emotional reaction to a 'foreign' non-English language.

These findings suggest that second-language achievement is facilitated by an accepting orientation toward outgroups and hindered by an over-identification with the single language group to which one belongs.

Language Learning and "Anomie"

"Anomie", a concept first proposed by Durkheim in 1897, and experimentally developed by Williams (1951), refers to the feeling of social uncertainty and dissatisfaction which sometimes characterizes not only bilinguals but also the serious student of a second language. As one becomes more proficient in a second language his place in the original membership group changes, and he becomes more a part of the other

language-cultural group. He moves to a marginal position in both cultures. He feels some chagrin or regret as he loses ties with one group and anticipates new ties with another. These feelings of chagrin and becoming marginal are crucial variables in second-language learning (Lambert, 1961, 1963).

Using Chinese-English bilingual students Earle (1967) investigated semantic merging, the coming together of meanings as an aspect of acculturation. He assumed that acculturation would result in the individual accepting beliefs, values and customs of a new culture to some degree. He further assumed the acceptance of these new beliefs and the modification of old beliefs might also involve some modification in the old connotative meanings. To test the above assumptions, Earle used the Semantic Differential Scale on which he asked the bilingual student to indicate similarities and differences between some of his own beliefs, and those which he attributed to the members of the English community. On the basis of an analysis of belief discrepancies, he identified a group of English-affiliative and a group of Chinese-affiliative bilingual students. He found the acceptance of beliefs by these groups to be related to open-mindedness as studied by Rokeach (1960), with the English-affiliative group obtaining significantly lower scores on the dogmatism scale when compared with the group that remained affiliated

with the Chinese culture.

The Process of Acquiring a Second Language

The distinction between integrative and instrumental orientations among language learners implies an attitudinal as well as a motivational difference (Gardner, 1958, 1959). Those students who are instrumentally oriented may be handicapped by the fact that the linguistic responses that they are trying to learn are not intrinsically rewarding to them. That is, the responses are not particularly liked for their own sake, while integratively oriented students, on the other hand, enjoy the foreign speech sound, grammatical rules, etc., because they have acquired the behavioural attributes of valued members of the other language group.

Many researchers imply that second-language acquisition involves primarily the substitution of new symbols for old. This interpretation appears to be an over-simplification. Rivers (1964) reports that in learning the first language, the child is negatively reinforced when his accent and grammar varies from native linguistic habits. For many people, this training continues over a longer period of time. These patterns become embedded in other things that have been learned. When a student acquires a second language, he is learning responses which were not permissible in the development of the first

language, i.e. the responses were negatively reinforced when initially made. He comments:

Let us examine the demands made of the student learning a second-language. We are asking him to return to a very early stage of his development. Much of his ability to adjust to the environment and to manipulate people and material has come with his increasing skill in the use of his native language. It has taken him many years to achieve this control of his own language as an effective tool. Suddenly he is plunged back into complete helplessness. He has been asked by the peers and elders to be ashamed of behaving like an infant. Now he is asked to do just that; to practice strange words and modes of expressions, to follow blindly the leads of the teacher, and to lay aside his well trained habits of thinking for himself. The material he is asked to learn or read often has a childish content (Rivers, 1964, p. 92).

If that is so, facts like these seem to be behind Nida's observations, described earlier from case studies, that some intelligent missionary students found learning of a foreign language difficult because of their conception that to learn a language would be to risk a loss of face (Pimsleur, 1961).

For Lambert, second-language acquisition involves more than substituting a new set of symbols which are equivalent to an already learned set. The new symbols have taken on distinctive meanings and affective connotations of various sorts merely because they are part of the cultural characteristics of an 'other' language group. That is, words like *maison*, *église*, etc., connote Frenchness, or at least foreignness, even

before they acquire specific meaning. This line of thought has led Lambert to modify Ervin and Osgood's notions of how two language systems will actually interact for the foreign student, or for the bilingual person. Ervin and Osgood (1954) postulate two types of language system, the 'compound' and the 'coordinate'. The compound language system presumably develops in a linguistically fused context where the two language symbols are interchangeable and used to refer to the same environmental events, while the coordinated system develops in separate contexts where one language is consistently used in one situation and the other language in another. Bilinguals who have learned their two languages within one context develop a compound bilingual system, whereas the coordinate system develops when the language-acquisition contexts are culturally, or functionally segregated.

Lambert (1960) suggests that second-language symbols are not completely meaningless, but that they tend to evoke in an individual some portion of his total response pattern (i.e. an attitude) to the language group that this symbol identifies or represents. He thinks that every first and second-language symbol has associated with it two components of 'meaning': a general attitude towards the language group, common to all concepts within a language system; and a meaning specific to the concept. Whenever the attitude evoked by the

symbols of the other language is as favorable as that associated with one's own language group, the semantic separation between the translated equivalents would approach zero, but where it is different, the semantic separation would be significantly greater than zero. One would expect therefore semantic separation to be a function of the degree of negative attitudes held towards the other language group.

Motivation and Acquisition of Second Language

Many theorists have hypothesized different motives for acquiring a second language. The student might be motivated by the novelty of findings of new words for familiar stimuli (i.e. Berlyne's exploratory drive, 1960). He might learn a language because of the fear of failing an examination (he must write for credits). Such motives can work for a short period of time. Moreover, during the laborious task of acquiring a new language, the novelty diminishes and fear of failure can lead to 'cramming' those aspects of language which are frequently tested in examinations.

In order to understand a student's motivation to acquire a second language, it is necessary to explain his long-term drive for learning the language. Motivation in the acquisition of the first language might provide us with some answers. At birth, all infants, regardless

of culture or language membership groups, presumably manifest the same profiles for hearing sound (Osgood, 1954). The children acquire the language sounds of their parents through modelling (Bandura and Walters, 1963), or through imitation (Miller and Dollard, 1941). Researchers have attempted to explain modelling in terms of secondary reinforcement (Mowrer, 1950; Ervin, 1954; Davitz, 1955; Osgood, 1957). Verbal response is self-rewarding because it reproduces the cues associated with the valued person, and consequently is learned. Mowrer (1950, p. 714) calls this tendency for the child to copy the parent, especially in the parents' absence, identification and regards it as significant in first language acquisition. Linguistic responses are learned because the responses themselves are rewarding. This line of reasoning is further supported by the fact that children raised under conditions of lack of identity showed marked retardation in language skills (Williams, 1937; Moore, 1947; Bunbraum, 1949; Bowlby, 1952; McCarty, 1954). In recent years, the importance of identification in the second language learning situation has become quite evident (Politzer, 1953; Ervin, 1954; Whyte, 1956; Nida, 1956; Earle, 1967; Lambert, 1967).

The social-psychological theory of second language may be summarized as follows:

- (1) A set of linguistic aptitudes do not

adequately explain the learning of a foreign language. Social attitudes and motives are involved.

- (2) Integratively oriented people have less difficulty in acquiring a second language than instrumentally oriented individuals. An integrative orientation produces an 'approach dimension' for second language learning whereas an instrumental orientation may tend to produce the opposite, an 'avoidance dimension'.
- (3) Identification with the other culture facilitates second language learning.
- (4) Second-language acquisition involves more than associating a new set of symbols to an already learned set. The new symbols already have taken on distinctive meanings and affective connotations merely because they are part of the 'other' cultural group.
- (5) Because the integrative motive is compatible with a non-authoritarian personality pattern, there is the possibility that a basic personality disposition is related to second language learning.

B. FLEXIBILITY-RIGIDITY AS A DIMENSION OF MIND

The Concept of Rigidity

Although the term rigidity has been frequently employed in psychological literature, an acceptable definition of the term has been difficult to formulate (Werner, 1946; Rokeach, 1948; Fisher, 1949; Cattell et al., 1954; Leach, 1967). The term has been used to describe: inability to change habits or sets, perseveration, and inability to make discriminations. It may also be noted that there are two schools of thought on rigidity; the one school considers rigidity to be a 'general' personality dimension which permeates every sphere of the individual's life; the other considers rigidity to be a task specific factor.

Chown (1959) reports that Neisser introduced the term perseveration to psychological literature in 1884. It was again used by Spearman in 1927, to describe mental inertia. Pinard (1932) demonstrated experimentally that perseverative tendencies existed as a psychological factor, and that individual differences in rigidity were related to personality differences. He developed batteries of simple perceptual and motor tasks which required shifts in activity. He found that children with behaviour problems were characterized either by unusually high or unusually low perseveration (Pinard, 1932, p. 126).

Cattell (1935) draws a distinction between the inertia of mental processes, found when a person is asked to alternate between two motor skills, and disposition rigidity, which operates when a familiar task has to be performed in a new way. Cattell concludes that disposition rigidity is related to personality factors such as lack of character integration and submissiveness.

Werner (1946) notes that statements about rigidity are sometimes contradictory because it is defined structurally by some authors and functionally by others. He interprets structural rigidity as a property of 'mental organization', and functional rigidity as the inability of the organism to produce a variety of responses, such as those which can be attributed to brain injury. Werner assigns the structural interpretation of rigidity to Gestalt Psychology, in which rigidity is regarded as a degree of separation, or the relative independence of regions within the personality structure. This interpretation of rigidity is close to cognitive and disposition types of rigidity. Kounin (1941), a follower of Lewin, considers rigidity to be due to the pressure of strong boundaries between mental functions. He comments:

If a task is facilitated by the lack of communication between neighbouring regions such a task will be more efficiently and accurately

performed by an older and/or more feeble-minded individual (as indicated by the transfer of habit experiment) (Kounin, 1941, p. 271).

The work done on rigidity, it can be noted from the above research, was guided by either a 'general' or 'specific' concept of rigidity.

A large number of studies were conducted to determine whether rigidity was a general or specific attribute of personality, the most important being those of Rokeach (1948) and of Rubenowitz (1963). Rokeach (1948) attempts to relate mental rigidity and ethnocentrism. He notes that there is a general rigidity factor and the individuals who are rigid in solving specific social problems also show up as rigid in solving non-social problems. He used the California Ethnocentrism Scale (Adorno, 1950) as a measure of prejudice and Luchins' Einstellung experiment as a measure of rigidity. The results of the study confirmed Rokeach's hypothesis of a general factor.

Luchins (1949), originator of the Einstellung test, severely criticized Rokeach's conclusions. As a result of the controversy between Luchin and Rokeach, Goldstein (1953), Applezweig (1954), Schaie (1955), Wolpert (1955), French (1955), Baer (1964), and Stewin (1968) carried out studies which contradicted to varying degrees Rokeach's hypotheses of a general factor of

rigidity. However, Cowen, Wiener, and Hess (1953), Schmidt, Fonda and Wesley (1954) tend to agree with Rokeach (1948) that rigidity is an entity within personality.

Rubenowitz (1963) utilizes a factor-analytic approach to examine several aspects of social rigidity. He concludes flexibility-rigidity to be a functional unity, pervading the whole personality and influencing the ways of a person's perceiving, thinking and acting. According to him this functional unity is traceable to an individual's need to organize his perception of the world around him in such a way that he experiences it as fairly stable and secure.

The origins or determinants of flexibility-rigidity and its consequences or manifestations can be represented diagrammatically as shown in Figure 1.

Flexibility-rigidity is considered by Rubenowitz as a multidetermined functional unity. He derived a number of quantifiable variables from attitude scales, personality and psycho-diagnostic tests. Using factor analysis he concludes that:

In adults, a general factor of flexibility-rigidity can be identified, a factor which accounts for a considerable part of variance in thinking, attitudes and displayed behaviour (Rubenowitz, 1963, p. 45).

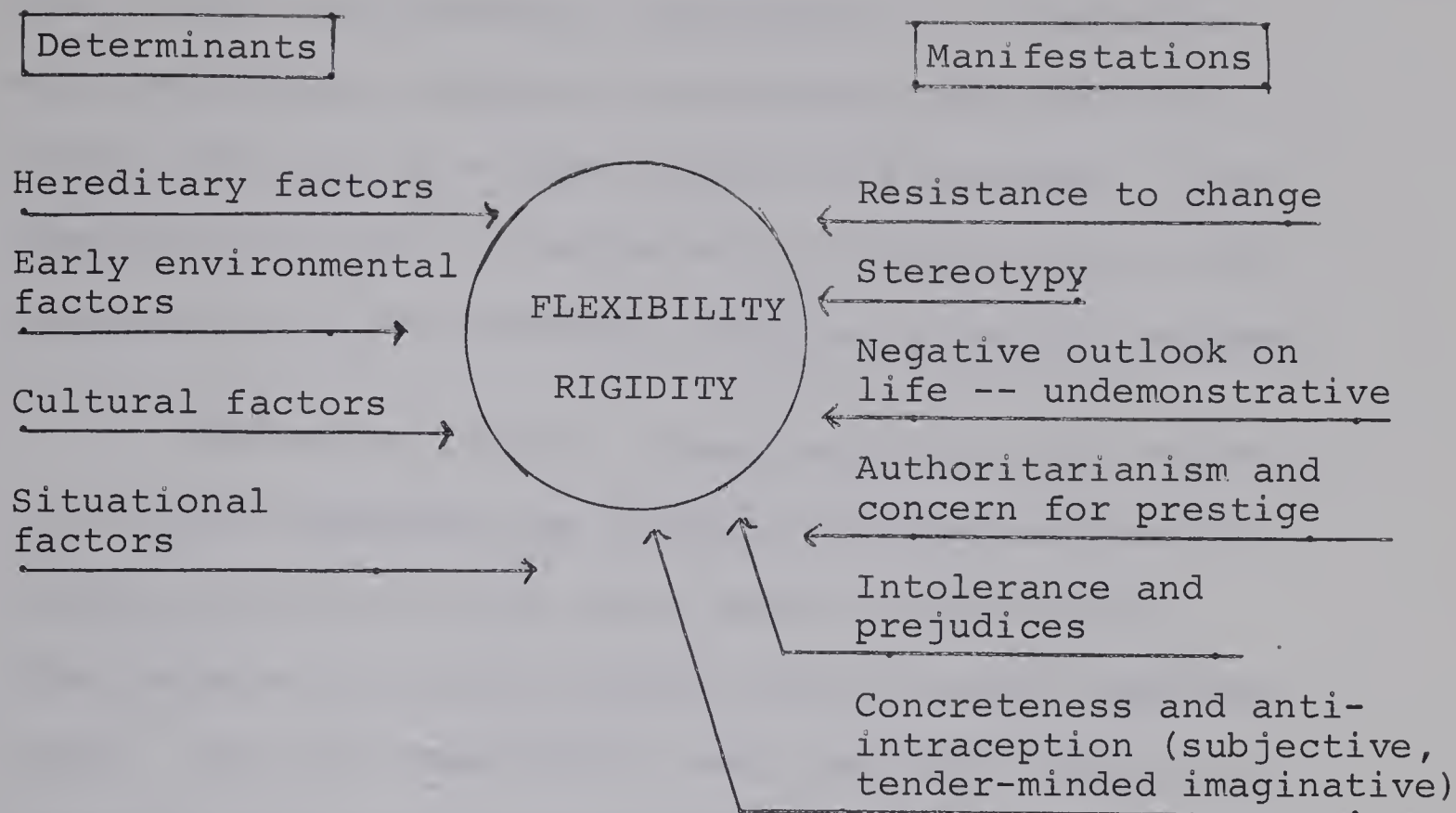


FIGURE 1

ORIGINS OF FLEXIBILITY-RIGIDITY AND MANIFESTATIONS
(Rubenowitz, 1963, p. 232)

According to Rubenowitz, early environmental experiences are major determinants of the manner in which an individual perceives the world around him. Repressed hostility and anxiety seem to be a function of how the child is hampered in his exploration of the world around him. This hampering, a negative reinforcement leads to the accumulation of tensions, and behaviour becomes compulsively rigid. He further comments:

We have earlier stated our opinion that the genesis of rigidity can be assumed to be multi-determined. Hereditary, early environmental, cultural and situational factors may contribute toward the degree of rigidity, characterizing an individual at a special moment (Rubenowitz, 1963, p. 42).

Thus, early environmental experiences in interaction with hereditary endowments predispose the individual toward rigidity in a wide variety of situations. This predisposition may be reflected in thinking and in the acquisition of new knowledge, such as a second language.

Rubenowitz (1963), though substantiating Rokeach's conclusion regarding the rigidity in human personality, differs from him on one major point; regarding the transference of social rigidity to non-social behaviour areas. For him, Rubenowitz, many important aspects of cognitive functioning are related more crucially to personality variables than to intelligence. He observes:

... but we are not inclined to agree when he (Rokeach) includes intellectual problem solving among these aspects. According to our findings a person's ideological orientation may be clearly distinguished from his conceptual behaviour in intellectual problem solving when emotions are not involved (Rubenowitz, 1963, p. 237).

Rubenowitz distinguishes between the intellectual and emotional determinants of behaviour. In his detailed study of Emotional Flexibility-Rigidity as a Comprehensive Dimension of Mind, he contends that the influence of rigidity is restricted to the affective areas of the individual's life, such as attitudes. He contradicts Rokeach's claim that this general trait influences every sphere of a person's existence.

If the claims for an affective factor of rigidity

as measured by attitude scales can be supported, then persons who are rigid in their attitudes can be expected to have difficulty in a second language. Likewise, persons who exhibit low attitudinal rigidity should show greater facility for learning a second language (Lambert, 1963, 1967).

The literature on rigidity can be summed up as follows:

- (1) The flexibility-rigidity construct studied by Rubenowitz differs from the term rigidity as used by clinical psychologists and psychiatrists with reference to neurological or other abnormalities. It is a construct which refers more to the emotional than to the intellectual nature of a person.
- (2) The California F-scale (Adorno, et al., 1950), the Gough-Sanford Rigidity Scale and Rokeach's Opinionation Scale can help to identify the general factor of flexibility-rigidity (Rubenowitz, 1963).

C. SET AND SECOND LANGUAGE LEARNING

In addition to the role of flexibility-rigidity in second language learning examined in the previous section, the psychology of set developed in the Uznadze institute of psychology, Tbilisi, U.S.S.R. has also been

related to second language learning. Because the Soviet work on the psychology of set is not yet widely known in the West, the writer provides the reader with a brief introduction to the theory of set. The general postulate underlying the theory of set is stated by Prangishvili, Uznadze's long time student and colleague, as follows:

Set should be conceived of as the integrated personality mode of the actor at each discrete moment of his activity which (a) representing as it does the highest organization level of -- to borrow a formula from Marx -- man's "essential powers" of the mind, brings into a focus, as it were, all those inner dynamic relations that mediate in the individual the psychological effect of stimuli acting on him and (b) provides the basis for the emergence of definitely oriented activity as a process of bringing in balance the relationships obtaining at the moment between the individual and his environment (Prangishvili, 1966, p. 53).

From this postulate is derived a special field of psychology of personality, namely set.

Set for Uznadze (1967) is primarily a psychological state not just a physiological phenomenon, and the emphasis is upon the qualitative modification of the total organism that ensues from the integration of the quantitative changes that occur during ontogenesis. Experience brings about quantitative changes in the brain (Hebb, 1949; Osgood, 1957; Penfield and Rasmussen, 1957; Pribram, 1964). Krech (1966) thinks that seeing, hearing, feeling, smelling, in a word that experience, especially repeated or intense experience, does alter the brain in some way, and each qualitatively different experience alters

the brain in a different way. But as these separate experiences become consolidated (Pribram, 1964) and integrated (Penfield and Rasmussen, 1957; Sokolov, 1962, 1963) a qualitative modification in the organism also occurs. This phenomenon is explained by the theory of set.

For Uznadze, the personality is conceived as a subject who interacts with the environment and whose activity is directed through the mediation of set. Set underlies all activity of the individual and forms the basis for the emergence and development of all psychic processes. Set is the basic unit of all activity and determines the kind and degree of incorporation of specific conscious content of experience. Thus, personality as seen by Uznadze is comprised of three factors: (1) an active person who (2) possesses a certain set for activity which (3) determines what specific conscious content, derived through interaction with the environment, will be incorporated by the individual.

Uznadze's model of behaviour is similar to Piaget's concept of adaptation, the cycle between accommodation to the environment and the assimilation of the environment to an internal schema. The individual is motivated by specific needs to establish a mutual relationship with a

specific situation in the environment which satisfied that need. As Prangishvili comments:

Psychic actions arise on the plane of objectification, i.e. in connection with the necessity of replacing the existing set by a set corresponding to the altered needs or to a change in the objective reality.... The psychic processes represent a reflection of being and at the same time a link in the regulation of behaviour (Prangishvili, 1962, p. 196).

Uznadze's Concept of Need

Uznadze (1967) defines needs as all states of the psychological organisms which are concerned with changes in the environment. They provide impulses for activity. There are two types of needs, substantial and functional. The substantial needs are synonymous with the viscerogenic needs or drives while the functional needs refer to the neurogenic motives. Uznadze thinks that there is an additional class of needs, cognitive needs, which are the elaborations of the substantial needs or drives. These functional or cognitive needs are characteristic of human motivation.

Objectivization

Uznadze (1967) refers to the special and higher mental process, by means of which the relationship of the subject towards an object becomes a cognitive relationship, as objectivization. The individual becomes conscious of the situation which has been related to his needs, clarifies the interferences which have arisen, and

mobilizes action. As a result of this objectivization a set arises. Moreover, the objectivization of set is closely associated to the phenomena of speech and its acquisition (Uznadze, 1967, p. 119).

Experimental Work on Set

(This section is added here for the benefit of those who are interested in the experimental work being carried on in the U.S.S.R. and in some other parts of the world. Readers who are not interested in the experimental work on set at this time can go to page 32 and start with the section called Set and Linguistic Codes.)

Uznadze (1967) performs an analogy of Fechner's illusion of weight by haptic perception of the volume of the spheres. The test is as follows: a subject, with eyes closed, compared the volume of two unequal spheres (same weight, different volume) which are placed momentarily and simultaneously in his hands. Each time the spheres are presented, the subject gives an answer regarding their size. These are called set trials. The presentation is repeated for about ten trials; at this stage of the subject is supposed to develop and then 'fix' a specific internal readiness, that is, a set for the perception of the larger sphere in a definite direction (right or left). After the

set tests, the experimenter immediately and without notice switches over to the critical tests. The subject is presented with two spheres having equal volume and is asked to compare them. Uznadze (1967) found that 97 per cent of the subjects perceived the spheres as being unequal. During the extinction process (when the equal spheres were presented over and over again) it was found that the transition for a set illusion to an adequate perception of the equal spheres had a phasic nature.

Three main phases occurred in the following sequence:

- (1) Contrast illusion. The object is perceived as being larger on that side in which during the setting tests a smaller object was perceived.
- (2) Assimilative illusion. The object is perceived as being larger on that side in which during the setting tests the larger object was perceived.
- (3) Adequate perception. The objects are perceived as being equal.

Since individuals differ in both their ability to develop a fixated set and to reach adequate perception, Uznadze (1967) used this as a basis for the study of personality and psychopathology.

Eliave (1960) considers set as a psychological

mode of personality, an inner factor which mediates the effects of external stimulation. He uses pictures of sailboats, lotus blossoms and different poses of the same ballerina for studying the directional effect of set as perceptual activity. For example, in one study a picture of a sailboat is presented to the subject for several trials with the help of a tachistoscope. In the critical trials, a picture of a lotus flower are presented. It is found that parts of the flower are perceived in terms of the sailboat.

Imedadze (1967) uses the Uznadze concept of set to explain the mechanism of the alternate autonomous functioning of two languages. She thinks that occurrence of a speech activity requires a need for communication and the situation in which it may be gratified, as well as the availability of means or instruments of communication (vocabularly, speech, habits and skills). She points out:

Thus the functional autonomy of two language systems emerging at a definite state in the speech development of a bilingual child is determined by evolving of two distinct sets alternately actualized (Imedadze, 1967, p. 132).

Set and Linguistic Codes

Hertzog (1967) considers that the set of the individual determines the kind of linguistic code used, the greater the readiness for activity of the individual the more complex is the linguistic code (Bernstein, 1959, 1965). Set characteristics chosen as independent variables for this research were: rate of fixation of set in the haptic and visual modalities, rate of extinction of set in the haptic and visual modalities, and rate of cross modality transfer from the haptic modality to the visual modality. The dependent variables were Bernstein's (1965) seventeen characteristics of linguistic codes.

Five hypotheses were tested:

- (1) Individuals who require few setting trials to fixate in the haptic modality possess characteristics of an elaborated code.
- (2) Individuals who require few setting trials to fixate in the visual modality possess characteristics of an elaborated code.
- (3) Individuals who require few critical trials to reach adequate perception in the haptic modality possess characteristics of an elaborated code.
- (4) Individuals who require few critical trials to reach adequate perception in the visual modality possess characteristics of an elaborated code.

- (5) Individuals who require few setting trials in the haptic modality for transfer to the visual modality possess characteristics of an elaborated code.

The results supported all the hypotheses to a substantial degree. From these conclusions it is argued that with a dynamic set more information is processed, and an individual with a dynamic set will acquire a second language readily.

In summary, it can be stated that set is a psychological state underlying, directing, and integrating all psychic processes. Set is the key for understanding the interaction between the organism and environment. Set is a code or a filter which is an important determinant in information processing and language acquisition.

D. FEATURES COMMON TO THE SOCIAL-PSYCHOLOGICAL,
PERSONALITY AND SET APPROACHES TO SECOND
LANGUAGE ACQUISITION

According to Lambert, the problem of learning a second language should be viewed from a social-psychological perspective. It means that the social influences that affect the individual learning a second language must be kept in mind. Language learning and switching, according to this line of thinking, involves major

conflicts of values and allegiances and the learner has to make various types of adjustments to the bicultural demands made on him. These adjustments produce individual differences in the acquisition of a second language. As Carrol (1960) comments:

There are many extremely talented students in the schools who will still have trouble with languages, and there are many students of general (average) ability who could succeed quite well in foreign languages (p. 131).

This fact is further supported by the findings of Wittich (1962) who points out that I.Q. was the poorest single predictor of achievement in foreign languages.

Ervin and Osgood (1954) approach the problem of the individual differences in the acquisition of second language learning by introducing the concept of 'Compound' and 'Coordinated' bilingualism. They suggest that a person learning a second language must acquire two sets of decoding (understanding of the stimulus) and encoding (responding) habits.

All this suggests that in coordinated training, a sign is associated with an environmental event or significate, and in compound training, it is associated with a translation - equivalent in the other language. Though Ervin and Osgood (1954) provide us with a model to explain second language learning, they have neglected to include motivational and personality variables in

second language performance. Because a language expresses (and is, therefore, perfectly associated with) the distinctive rules and values which represent a culture, giving up a language can be interpreted as a betrayal of one's country and oneself (Weinreich, 1953).

Lambert's (1963, 1967) findings about orientations seem relevant when explained using the belief and disbelief dissonance which divides the groups (Rokeach, 1960). Rokeach (1960) comments that belief congruence between two groups will promote future inter-group and inter-individual cooperation and favourable evaluations. It means that correlates of the 'integrative orientation' make sense, if they are seen as the product of belief (values) congruence. The fear of loss of 'ties', e.g., Durkheim's anomie which makes the personality rigid, (Werner, 1946; Rokeach, 1948) helps explain the negative motivation for second language learning. These 'ties' are remarkably similar to the 'conceptual ties' which according to Harvey, Hunt and Schroder (1961) keep the individual moored to his social and physical environment.

Lambert (1963, p. 115) claims that integrative orientation is the converse of ethnocentrism and the rigidity factor of personality. Psychologists of various orientations have viewed rigidity as perseveration, p factor (Spearman, 1927), persistence

(Cattell, 1935; and Levine, 1955) and disposition rigidity (Walker and Staines, 1943). From the early fifties, rigidity has been looked at from a socio-psychological angle and has since become an integral part of an all inclusive concept of authoritarianism (Adorno et al., 1950). This California study, has briefly, brought to the general notice that much of the variance of rigidity attitudes and belief systems may be attributed to psychodynamic processes. Rokeach (1960) considers rigidity as resistance to change of systems of beliefs or

the extent to which a person can receive, evaluate, and act on relevant information received from outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from outside it (1960, p. 57).

As far as the concept of rigidity is concerned one can note a shift from a neuro-psychological to a social psychological approach. If that is so, this concept viewed from a social psychological angle becomes a very crucial factor in second language acquisition as seen by Lambert (1967).

Whereas Rubenowitz (1963) regards rigidity as a functional unity pervading the whole personality and influencing the way of perceiving, thinking and acting, psychologists in the Uznadze tradition conceive the integral subject of personality as the set, which disposes an individual to behave and respond in a particular manner (Uznadze, 1967; Prangishvili, 1962, 1966).

There is an inextricable connection between language and set (Prangishvili, 1962). The individual possesses certain needs which can only be met by a specific objective situation. On the basis of the relationship between a need and a situation, activity arises having a definite direction. The concept of set expresses this relationship as a readiness for activity. However, the need achieves intentional urgency (Piaget, 1950) only when specific objective situations for satisfying this need are established. This involves focus (Uznadze, 1967). As White (1959) comments:

Behaviour involves focal attention to some object ... the fixing of some aspect of the stimulus field so that it stays relatively constant ... and it also involves the focalizing of action upon this object.... Dealing with the environment means directing focal attention to some part of it and organizing actions (White, 1959, p. 329).

It means that new sets constantly emerge on the basis of the altered situation which correspond more closely to reality. Uznadze's emphasis on a dynamic state of readiness for activity as the basis for objectification is echoed in Chomsky's idea that active declarative thought underlies speech (Chomsky, 1957); Vygotsky's conception of thought as pure meaning or prediction (Vygotsky, 1966); Hebb's idea that only what is meaningful establishes effective control over the cortex in the form of superordinate systems of cell assemblies (Hebb, 1949). Belyayev (1963), thinking in

the same direction, comments that the use of a foreign language presupposes the formation of a special dynamic stereotype in the cortex of the large cerebral hemisphere. This stereotype functions in a manner similar to that of the dynamic stereotype which underlies the use of the native language.

Further understanding of the physiological basis of the dynamic stereotype of second-language and set can be gained by a brief exposition of the conditioned reflex (Pavlov, 1927; Gantt, 1959). A conditioned reflex refers to the organism's total response to a stimulus (Pavlov, 1927). What the stimulus is, will be a function of the orienting reflex (Razran, 1961; Sokolov, 1963; Pribram, 1964), attention (Hebb, 1949; Boguslavsky, 1957; Pribram, 1964), observation (Uznadze, 1967) or focus (Uznadze, 1958, 1967; Prangishvili, 1962). As a result of the responses to these sensory events, the first signal system becomes established and systematized (Pavlov, 1927) such that behaviour begins to become patterned or organized (Hebb, 1949). As these first signal reactions become integrated and consolidated in the cortex there emerges the so-called dynamic stereotype (Pavlov, 1927). This integration of reflexes is greatly enhanced and accelerated through the instrumentality of language (Pavlov, 1927). Dynamic stereotype is assumed to be the physiological basis of set

(Natadze, 1962; Prangishvili, 1962) and is mediational in all behaviour.

If that is so, it follows that set is conceived as a psychological state which determines the direction of focussing as well as the way in which information will be processed. On the other hand rigidity is regarded as a functional unity pervading the whole personality and influencing the ways of perceiving, thinking and acting. Moreover, set is also the determinant of what stimuli the individual attends to and how he organizes them in order to make some responses.

The above discussion leads to the following postulate: Flexibility-rigidity and modes of set establishment are significant sources of variance in second-language acquisition.

CHAPTER III

DEFINITIONS, HYPOTHESES AND EXPERIMENTAL DESIGN

The discussion of common features to the social-psychological, personality and set approaches to second language learning leads to the following postulate: Flexibility-rigidity and modes of set establishment are significant sources of variance in second-language acquisition. To study the above postulate the following definitions and hypotheses are advanced:

Definitions and Hypotheses

(1) Good Second Language Learners are students who score high on the second language test but low on School and College Ability Test (SCAT). Their raw scores on the MLA foreign language test (French) Form MA and SCAT were converted into standard score with a mean of 50 and SD of 10. The good second language learner is taken to be one whose normalized score on the French test is at least five points higher than his normalized score on the SCAT.

(2) Poor Second Language Learners are those whose normalized score on the French test are at least five points lower than their normalized score on the SCAT.

(3) Instrumental Orientation of a student is characterized by the utilitarian value he places on

linguistic achievement, such as getting credits for high school diploma or getting ahead in one's occupation.

(4) Integrative orientation of a student is characterized by his desire to learn more about the other cultural community. The methods of measuring these two orientations are discussed in Chapter II, page 9.

(5) Flexibility-Rigidity is measured by using: the California F-Scale, the Gough Sanford Rigidity Scale and Opinionation Scale, Canadian version (Peters, 1961). A Likert scale was utilized to establish the degree of agreement or disagreement between individual items (Rokeach, McGovney, Denny, 1960; Rubenowitz, 1963).

(6) Set Fixation and Extinction is identified by using Uznadze sphere method for fixating set in haptic modality, utilizing Uznadze (1967) method of administering and scoring.

HYPOTHESIS

The following hypothesis is investigated:

H_1 : No significant difference exists between good second language learner group and poor second language learner group on the measure of flexibility-rigidity, in set fixation and extinction and their orientations.

In terms of the instruments used, the following specific statements will be put to statistical tests.

(1) No significant difference exists between good and poor second language learner groups on set fixation scores.

(2) No significant difference exists between good and poor second language learner groups on set extinction scores.

(3) No significant difference exists between good and poor second language learner groups on F-Scale scores.

(4) No significant difference exists between good and poor second language learner groups on Gough Sanford rigidity scale scores.

(5) No significant difference exists between good and poor second language learner groups on Opinionation Scale, Canadian version.

(6) No significant difference exists between good and poor second language learner groups on orientation.

EXPERIMENT PROCEDURE

A student data questionnaire (see Appendix A) was administered to 779 students enrolled in the introductory educational psychology course at the University of Alberta, to identify those students who had no French

language background before high school and studied French only for three years in high school. One hundred and sixty students met this criterion. They were then given the listening and reading comprehension parts of the French form of the Modern Language test, form MA. The normalized scores which the students obtained in this test were compared with their standing on the School and College Ability Test (SCAT) to identify good second language learners and poor second language learners. The scores for the School and College Ability Test were procured from the Department of Education, Province of Alberta. The good second language learner was taken to be one whose normalized score was five points higher than his normalized score on the SCAT; the poor second language learner was taken to be one whose normalized score on the French test was five points lower.

The good and poor second language learners were administered the following personality measures:

- (1) The California F-scale (Adorno, et al., 1950).
- (2) Gough Sanford Rigidity Scale (Rokeach, 1960).
- (3) Opinionation Scale, Canadian version (Peters, 1961).

After group sessions data were scored and tabulated and individual testing sessions were scheduled. All individual sessions, employing Uznadze's set testing

material for haptic modality (Uznadze, 1967) were conducted under uniform conditions regarding examiner, setting and administrative instructions.

A. Fixation of Set in the Haptic Modality

The subject was seated with his hands resting on his thighs with his palms upward. The subject was asked to close his eyes and the following instructions were then given:

I am going to present two spheres to you, one to each hand. You may grasp them for a moment and then I shall remove them. I shall repeat this a number of times. Each time I do this, please tell me if the spheres feel equal or unequal. If you think that they are unequal in size, tell me in which hand you feel the larger one. Please be sure to tell me each time I do this (Uznadze, 1967).

Following this, the two spheres of unequal size were placed in the palms, one in each palm with the larger sphere placed in the right palm (setting tests). The subject was allowed to grasp the spheres and then they were removed. The unequal spheres were presented twice and then the test for set was made. This was done by presenting two equal spheres without informing the subject (critical test). If they appeared unequal a set had been fixated. If no fixation appeared (i.e., they felt equal in size), then, the setting trials were resumed. Critical trials were subsequently made after every third setting trial until a set had been fixated or to the maximum of seventeen setting trials. The

verbal response given after each trial was recorded. Part B then followed.

B. Extinction of Set in the Haptic Modality

When the subject perceived the two equal spheres as being unequal a set had been established. To extinguish, the critical trials (presentation of the equal spheres) were continued until the spheres were perceived veridically for five consecutive trials or to a maximum of forty critical trials. The response after each critical trial was recorded.

With the completion of the set tests, the subject was thanked for his cooperation and asked not to discuss the experiment with the rest of the subjects until the testing was completed.

The subject was asked if he was taking any course in French language at the University of Alberta. If his answer was yes, his score was not used in the study.

THE INSTRUMENTS

The California F-Scale

The publication of the F-scale along with the evidence of its validity appeared in a book entitled, The Authoritarian Personality (Adorno, et al., 1950). The authors argue that central personality trends of an authoritarian personality can be characterized by the

following variables: conventionalism, authoritarian submission, authoritarian aggression, anti-intraception, superstition and stereotypy, power and 'toughness', destructiveness and cynicism, projectivity and obsession about sex. These variables can be measured reliably with the help of the F-scale.

Since 1950, a great deal of research has been done in the authoritarianism area. For example, Flowerman et al (1950) found correlations ranging from .30 to .60 between F-scale and prejudice. Goldstein (1952) confirmed that a general tolerance-prejudice factor exists in human beings, and that an authoritarian syndrome closely associated with prejudices is quite real. Similar findings were reported by Brown (1953) and Myers and Torrance (1961).

Rubenowitz (1963) points out that by using the F-scale the investigators in the California study have tried to prove that the social convictions of an individual often form a broad and coherent pattern and that this pattern is an expression of deep-lying trends in personality. He comments:

Our established construct does appear to have more in common with the concept of authoritarianism according to the California study. Thus one of the main research tools of the California study, the F-scale emerges with a considerable loading in our flexibility-rigidity factor (p. 236).

The F-scale was administered, employing a Likert

method of scaling to approximate the investigations of Rubenowitz. A test reliability coefficient calculated on retests of 50 individuals selected at random from the total population yielded a Pearson r of .72. The F-scale is presented in Appendix B.

GOUGH SANFORD RIGIDITY SCALE

Rubenowitz (1963) places more emphasis on the environmental factors as determinants of rigidity. He describes the Gough Sanford Rigidity scale as "... a measure of resistance to change in single habits or sets (p. 83)." Rokeach (1960) observes that the instrument is extensively used and is now included in the California Psychological Inventory, where it is designated Fx (Flexibility).

The Gough Sanford Rigidity Scale was administered employing a Likert method of scaling, to approximate the investigations of Rokeach, McGovney, Denny (1960) and Rubenowitz (1963). This scale is presented in Appendix C.

A test reliability coefficient calculated on retests of fifty individuals selected at random from the population yielded a Pearson r of .76.

Opinionation Scale, Canadian Version

This scale was used to serve as a measure of general intolerance. It had forty items in which one-half of the items represented the right opinionation, and the other half the left opinionation. The use of this scale permitted the measurement of total opinionation (left plus right opinionation). The scores were calculated using a Likert method of scaling.

A test reliability coefficient calculated on retests of fifty individuals selected at random from the population yielded a Pearson r of .74. This scale is presented in Appendix D.

Student Data Questionnaire

A student data questionnaire (see Appendix E) was constructed by the author to identify those students who had no French language background prior to grade ten, and had studied French only in the later high school grades. Orientation of the students was also determined using the Orientation Index method suggested by Lambert (1963).

MLA Cooperative Foreign Language Test (French) Form MA

This test is designed for those students who had studied the French language for three or four years in high school. There are four sub-tests in a single booklet: listening, speaking, reading and writing. Only the

listening and reading parts of this test were administered. Facilities of a language laboratory were used. The total time for administration was sixty minutes (Buros, 1965, p. 649).

Cooperative School and College Ability Test

This test measures school-learned abilities. Total score, which consists of the verbal score and the quantitative score, is used to predict academic success. Verbal score measures vocabulary and reading comprehension, whereas quantitative score measures arithmetic reasoning and understanding of mathematical operations (Cronbach, 1960).

SET TASKS

To test for characteristics of set in the haptic modality three spheres with handles are used. One sphere is 100 mm in diameter; the other two spheres are each 70 mm in diameter. Each sphere has a total weight of 300 gms (Uznadze, 1967). The Spearman correlations on the retest of individuals selected at random from the population were:

- (1) Fixation in the haptic modality -- .98.
- (2) Extinction in the haptic modality -- .98.

EXPERIMENTAL DESIGN

Subjects were assigned to two experimental groups.

(a) Good second language learners group were students who scored high on the reading and listening sections of the second language test, but low on School and College Ability Test. The normalized score of these forty students on French tests was at least five points higher than their normalized score on the SCAT. The mean of the normalized scores of the French test for this group was 57.27 and the S.D. was 8.33.

(b) Poor second language learner group were students who scored high on the SCAT, but low on reading and listening sections of the second language test. The normalized score of these forty students on the French test was at least five point lower than their normalized score on the SCAT. The mean of the normalized scores of the French test for this group was 44.12 and the S.D. was 9.66.

The following statistical techniques were employed:

- (1) t-test - Differences between means of correlated measures were tested using "t" test procedure suggested by Ferguson (1966).
- (2) Chi-square.
- (3) Multiple - Discriminant Analysis was used for analyzing data that consisted of five measures on each individual. These five measures were:
 - (a) set fixation score, (b) set extinction score,
 - (c) F-scale score, (d) rigidity scale score,
 - (e) opinionation scale score.

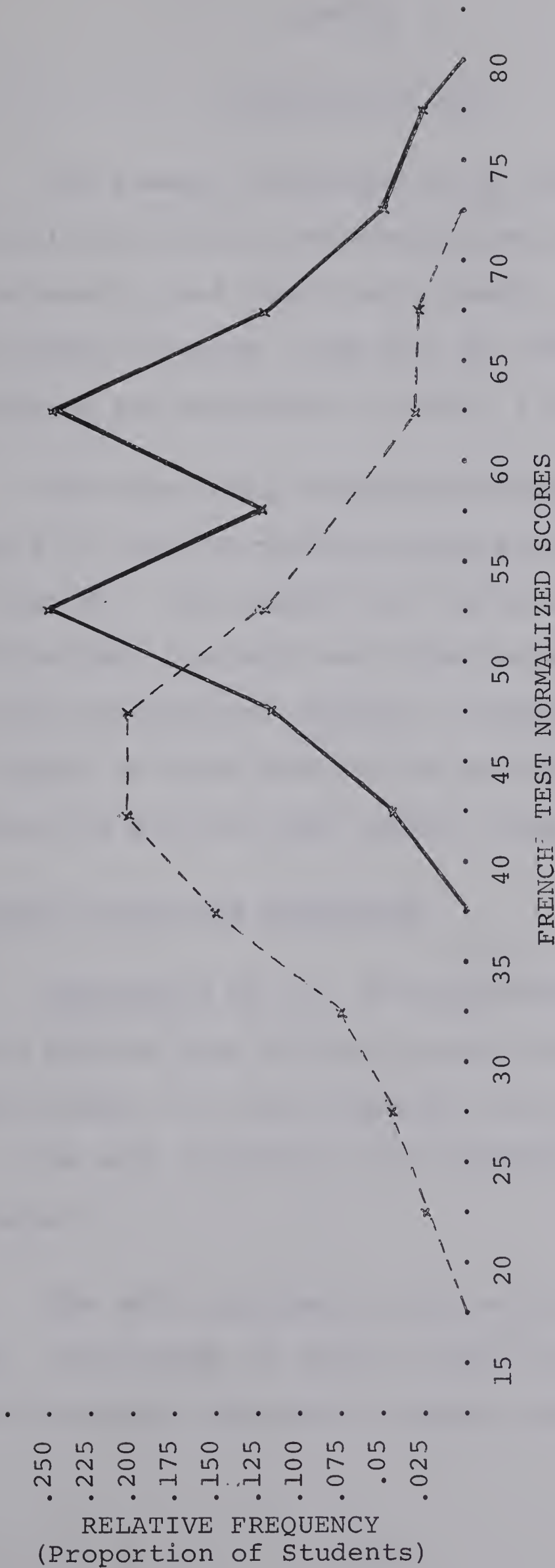


FIGURE 2

Relative Frequency Polygon of Normalized Second Language Achievement Scores of Good and Poor Second Language Learners

—— Good Second Language Learner

- - - - - Poor Second Language Learner

CHAPTER IV

ANALYSIS OF DATA

The present investigation is concerned with flexibility-rigidity, orientation and set as dimensions of personality and their relationship to the acquisition of a second language. The data for the pertinent hypotheses are presented in Tables I to VI.

The supporting intercorrelations between the results of the test used are demonstrated in Tables VII, VIII and IX. The results for the total group and for good and poor learners are listed separately. A multiple discriminant analysis is employed to identify the degree to which each of the scales discriminates between the good and poor second language learners.

Analysis of the Six Hypotheses

Hypothesis No. 1. No significant difference exists between good and poor second language learners on the number of trials required for the fixation of set. The data regarding this hypothesis is presented in Table I.

The null hypothesis could not be rejected at .05 level. The number of trials needed for good and poor second language learners to acquire set fixation, was

TABLE I

MEAN NUMBER OF TRIALS REQUIRED BY GOOD AND POOR
SECOND LANGUAGE LEARNERS FOR THE FIXATION OF SET

Group	N	Mean	S.D.
Good Learner	40	2.30	.71
Poor Learner	40	2.00	.63
Difference		.30	
t ratio		1.96	
Significance of t at .05 level		not significant	

not significantly different. Because the number of trials needed to fixate the set is related to readiness for activity (Uznadze, 1967), there was the possibility that good second language learners may have required fewer trials than did the poor second language learners. But the lack of a significant difference in connection with this hypothesis cannot be interpreted that set fixation is the same for good and poor acquirers of second languages. After all, the population in this study had successfully completed high school matriculation and passed the Grade XII examinations in French. If a group of poor second language learners from the population at large had been obtained, there might have been a difference in set fixation between good and poor second language learners.

Hypothesis No. 2. No significant difference exists between good and poor second language learners on the number of trials required for set extinction. The data related to this hypothesis are presented in Table II.

TABLE II

MEAN NUMBER OF TRIALS REQUIRED BY GOOD AND POOR SECOND LANGUAGE LEARNERS FOR THE EXTINCTION OF SET

Group	N	Mean	S.D.
Good Learner	40	6.15	3.55
Poor Learner	40	9.75	3.78
Difference		-3.60	
t ratio		4.33	
Significance of t at the .05 level		significant	

The null hypothesis is rejected as the difference between the means is significant even well beyond the .01 level. The rejection of this hypothesis implies that poor second language learners exhibited the properties of a static set. Because learning a second language is determined by evolving of two distinct sets, poor second language learners, not capable of extinguishing one set readily and beginning another, or shifting from set to set with difficulty, are hindered in their efforts to learn the second language.

Hypothesis No. 3. No significant difference exists between good and poor second language learners on the mean scores of the California F-scale. The results are presented in Table III.

TABLE III
MEAN SCORES ON THE CALIFORNIA F-SCALE OBTAINED BY GOOD AND POOR SECOND LANGUAGE LEARNERS

Group	N	Mean	S.D.
Good Learner	40	90.27	15.23
Poor Learner	40	106.60	22.07
Difference		- 16.33	
t ratio		3.8	
Significance of t at the .05 level		significant	

The null hypothesis was rejected as the difference between means is significant even well beyond the .01 level. The California F-scale, a measure of authoritarianism, prejudice and ethnocentrism, does differentiate between good and poor second language learners. It may be concluded that the more ethnocentric individuals included in this study have a negative disposition to the learning of another language and may tend to reject it. That authoritarianism and ethnocentrism should distinguish good and poor second language learners, is an indication of the strong effect of attitudes on how students learn in the classroom.

Hypothesis No. 4. No significant difference exists between good and poor second language learners on the mean scores of the Gough Sanford Rigidity Scale. The results are presented in Table IV.

TABLE IV

MEAN SCORES ON THE GOUGH SANFORD RIGIDITY SCALE OBTAINED BY GOOD AND POOR SECOND LANGUAGE LEARNERS

Group	N	Mean	S.D.
Good Learner	40	87.60	15.91
Poor Learner	40	97.55	19.69
Difference		- 9.95	
t ratio		2.45	
Significance of t at the .05 level		significant	

The null hypothesis was rejected as the difference between means was significant at beyond the .05 level. The Gough Sanford Rigidity Scale, a measure of social rigidity, does differentiate between good and poor second language learners. Socially rigid individuals, as identified by the high scores on this scale, can be expected to anticipate threat from everything novel. French language is not strange to high school students in Canada, but aspects of French language, such as placing of adjectives after the noun, are different from those of English. Poor second language learners, when faced

with novelty seem to react negatively to French as a subject of study.

Hypothesis No. 5. No significant difference exists between good and poor second language learners on the Rokeach Opinionated Scale, Canadian version. The results regarding this hypothesis are presented in Table V.

TABLE V

MEAN SCORES ON THE ROKEACH'S OPINIONATION SCALE
CANADIAN VERSION OBTAINED BY GOOD AND POOR
SECOND LANGUAGE LEARNERS

Group	N	Mean	S.D.
Good Learner	40	142.07	15.93
Poor Learner	40	134.87	23.39
Difference		7.2	
t ratio		1.5	
Significance of t at the .05 level		not significant	

The null hypothesis is accepted for the t ratio of 1.5 is less than 2.02, the t ratio equivalent to the .05 level of significance. The Rokeach Opinionation Scale Canadian version does not differentiate between good and poor second language learners. As opinionation scale measures general intolerance of those having different belief systems, it might appear that students who are more intolerant are also the ones more likely to learn

another language less well. However, the data obtained cannot be used to support this position. It should be pointed out that the direction of the data was opposite to the one which would support the view that the more opinionated would learn another language less well, because the poor second language learners were less opinionated, though not significantly, than the good learners.

Hypothesis No. 6. No significant difference exists between good and poor second language learners on instrumental and integrative orientations to the acquisition of the second language. The results relating to the hypothesis are presented in Table VI.

TABLE VI

FREQUENCY OF GOOD AND POOR SECOND LANGUAGE LEARNERS HAVING INSTRUMENTAL OR INTEGRATIVE ORIENTATIONS TO THE LEARNING OF ANOTHER LANGUAGE

Group	N	Integrative Orientation	Instrumental Orientation
Good Learners	40	25	15
Poor Learners	40	13	27
Total	80	38	42

Using the chi-square test, the value of χ^2 comes out to be 7.4 which is significant at .01 level.

It means that the orientation index differentiates between the good second language learners and poor second language learners who participated in this study.

The integratively oriented individuals who study second language to know about the culture it represents, bring to the learning situation their personal identification and involvement with the culture. On the other hand instrumentally oriented individuals who simply want to get credits may be limiting themselves to the minimum requirements for passing the language course. There is no substitute apparently, for genuine and intrinsic interest in the material being learned. The role of interest as a determinant of attention during learning is of prime importance and has been so regarded by psychologists such as McDougall (1908), Floru (1968), as well as others. An integrative orientation may foster interest and may sustain attention in learning a second language.

There are fifteen good learners who have instrumental orientation. There are thirteen poor learners who have integrative orientation. This indicates that among these individuals variables other than integrative and instrumental orientation are involved in second language learning.

Relationship Between the Tests

The data gathered on the tests from the eighty subjects were intercorrelated using the Pearson product moment correlation approach. The intercorrelation matrix is given in Table VII.

It may be noted from Table VII that the correlation between the scores of the MLA Foreign Language Test, (French) form MA, and the School and College Ability Tests (SCAT) is .064. The low correlation coefficient indicates that SCAT, which measures school learning abilities, is a poor predictor of the standardized second language test scores.

With the exception of trials needed for set fixation, second language test scores have negative correlations with trials needed for set extinction, the California F-Scale scores, Gough Sanford Rigidity scales scores and Opinionation Scale scores. Further, the negative correlation coefficient between set extinction and second language scores, and between the California F-Scale and second language scores are significant at .01 level. This implies that set extinction and the California F-Scale are better predictors of second language acquisition as compared to set fixation, rigidity scale and opinionation scale.

The high correlations among F-scale, Rigidity

TABLE VII

CORRELATION MATRIX OF SECOND LANGUAGE TEST, SCAT, SET
FIXATION, SET EXTINCTION, F-SCALE, RIGIDITY SCALE,
OPINIONATION SCALE FOR 80 GOOD AND POOR SECOND
LANGUAGE LEARNERS

Personality Indices	S.L.T. (a)	SCAT (b)	Set Fix (c)	Set Ext (d)	F-Scale (e)	R-Scale (f)
Second Lang- uage Test (a)						
SCAT (b)	.063					
Set Fixation (c)	.039	-.196				
Set Extinction (d)	-.425**	.189	.038			
F-Scale (e)	-.356**	.000	.060	.266*		
Rigidity (f)	-.205	.112	.010	.101	.597**	
Opinionation (g)	-.052	-.278*	.092	.016	.411**	.400**

- * -- Significant at .05 level.
- ** -- Significant at .01 level.
- (a) -- Foreign Language test form MA.
- (b) -- School and College Ability Test.
- (c) -- Trials on set fixation.
- (d) -- Trials on set extinction.
- (e) -- The California F-scale.
- (f) -- The Gough Sanford Rigidity Scale.
- (g) -- Rokeach Opinionation Scale, Canadian version.

Scale and Opinionation Scale support Rubenowitz (1963),
that a common factor of flexibility-rigidity is being
measured by these scales.

COMPARISON OF THE TEST INTERCORRELATIONS OBTAINED BY
GOOD AND POOR SECOND LANGUAGE LEARNERS

The significance of difference between correlations presented in Tables VIII and IX was tested using Fisher's Zr transformation (Ferguson, 1966, p. 188). It was found that correlations between the California F-Scale scores and Gough Sanford Rigidity Scale scores; the California F-scale Scores and the Opinionation Scale scores for good and poor second language learners differed significantly at the .05 level. It may be suggested that these scales are better predictors of poor second language learners than they were of the good second language learners.

TABLE VIII
CORRELATION MATRIX OF SET FIXATION, SET EXTINCTION,
F-SCALE, RIGIDITY SCALE AND OPINIONATION SCALE FOR
GOOD SECOND LANGUAGE LEARNERS
(N = 40)

Personality Indices	Set Fix	Set Ext	F-Scale	R-Scale
Set Fixation				
Set Extinction	-.017			
F-Scale	.157	.055		
Rigidity Scale	.032	-.033	.300**	
Opinionate Scale	.042	.125	.093	.425**

** -- Significant at .01 level.

TABLE IX
CORRELATION MATRIX OF SET FIXATION, SET EXTINCTION,
F-SCALE, RIGIDITY SCALE AND OPINIONATION SCALE FOR
POOR SECOND LANGUAGE LEARNERS
(N = 40)

Personality Indices	Set Fix	Set Ext	F-Scale	R-Scale
Set Fixation				
Set Extinction	.334**			
F-Scale	.175	.150		
Rigidity Scale	.112	.007	.700**	
Opinionate Scale	.070	.097	.738**	.500**

** -- Significant at .01 level

For poor second language learners, the correlations between the California F-Scale and Gough Sanford Rigidity Scale; the correlations between the California F-Scale and the Rokeach Opinionation Scale; the correlations between the Gough Sanford Rigidity Scale and the Rokeach's Opinionation Scale are all significant at the .01 level. For good second language learners the correlations between the California F-Scale and the Gough Sanford Rigidity Scale; the correlations between the Gough Sanford Rigidity Scale and the Rokeach's Opinionation Scale are both significant at the .01 level.

Multiple Discriminant Analysis was used for analyzing the data. Five measures, i.e., number of trials on set fixation and set extinction, the California

F-Scale scores, the Gough Sanford Rigidity Scale scores and Rokeach's Opinionation scores of each individual were used. The two groups were Good Second Language Learners and Poor Second Language Learners. The results are given in Tables X and XI.

TABLE X
SCALED WEIGHTS FOR THE PERSONALITY MEASURES OF GOOD AND POOR SECOND LANGUAGE LEARNERS

Opinionation Scale	10.27190
Set Fixation	5.81711
Rigidity Scale	- 4.26604
Set Extinction	- 8.25150
F-Scale	- 9.47915

TABLE XI
DISCRIMINANT SCORE MEANS VARIANCE AND STANDARD DEVIATIONS OF THE GOOD AND POOR LEARNERS

	Mean	Variance	S.D.	x^2	x^2 at .05 d.f. = 5
Good second language learners	1.444	2.478	1.57	46.81	11.1
Poor second language learners	-1.341	2.118	1.45		

From Tables X and XI it may be inferred that the weighted scores on the five scales can definitely classify individuals into a good second language learner group or a poor second language learner group. The mean score for good second language learners is greater than the mean score for the poor second language learners. It may be inferred that good second language learners have higher mean scores on Rokeach's Opinionation Scale Canadian version and require more trials on set fixation. The poor second language learners have higher mean scores on the Gough Sanford Rigidity Scale, the California F-Scale and require more trials on set extinction.

On the basis of the six specific hypotheses tested using the t ratio, chi-square test, intercorrelations of the good and poor second language learners and discriminant function analysis, the following general conclusions appear tenable.

(1) Good second language learners as compared to poor require fewer trials to extinguish a set, suggesting that they can easily switch set whereas poor second language learners exhibit properties of a static set.

(2) Good second language learners as compared to poor ones, are less authoritarian and ethnocentrically oriented.

(3) Good second language learners as compared to the poor ones are less socially rigid.

(4) Good second learners are integratively oriented, i.e., they learn the second language with a desire to know more about the culture associated with the language. On the other hand, the poor second language learners are instrumentally oriented. For example, they are more likely to study the second language, in order to get credits for college entrance.

(5) Number of trials needed for the fixation of set and the scores on Rokeach's Opinionation Scale Canadian version do not differentiate the good from the poor second language learner.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND FUTURE RESEARCH

The objective of the present study was to investigate whether good second language learners and poor second language learners differed on indices of flexibility-rigidity, set fixation and extinction, and orientation. One hundred sixty students enrolled in an introductory educational psychology course at the University of Alberta were selected as subjects when they met the criteria of having had no French language background prior to high school and had studied this language only in the three years of Alberta senior high school programs. Reading and listening comprehension tests taken from the French form of the Modern Language Association Cooperative Foreign Language Test, were administered to the students.

The good and poor second language learners were identified by comparing the total normalized scores which the students obtained on the French language test, with the normalized scores they obtained on the School and College Ability Test (SCAT). The good second language learner was designated as one whose normalized scores on the French test was at least five points higher than his normalized score on the SCAT; the poor second

language learner was taken to be one whose normalized score on the French test was at least five points lower.

The following tests were administered to these two groups (a) Lambert's Integrative-Instrumental Orientation Index; (b) California F-Scale; (c) Gough Sanford Rigidity Scale; (d) Rokeach's Opinionation Scale Canadian Version; and (e) Uznadze's set fixation and extinction tasks.

It was assumed that set and the affective personality dimension of flexibility-rigidity, because they predispose the individual to respond in a particular manner, may also be important factors in second language learning. This assumption was investigated by testing a set of hypotheses which are listed on page 42. Conclusions based on testing these hypotheses, may be summarized as follows:

There was no significant difference between the number of trials needed by the good and poor second language learners on set fixation. The mean number of trials needed by the poor second language learners for set fixation were two as compared to the 2.3 needed by the good second language learners. But good and poor second language learners differed significantly on the number of trials needed for set extinction. These findings agree with Byhalava (1966) who reports that a

person who fixates set with the minimum trials and does not achieve adequate perception (set extinction) during critical tests, manifests rigidity in personality, attitudes and displayed behaviour.

The mean scores obtained by good and poor second language learners on the California F-Scale and on the Gough Sanford Rigidity Scale were significantly different. As these scales purport to measure a general personality factor of flexibility-rigidity, which manifests itself in ethnocentrism, one may infer that good learners as compared to poor learners were positively motivated in their learning of the other language. This motivation may have its sources in the social psychological milieu and childhood experiences of the learner (Gardner, 1958; Lambert, 1963, 1967).

Good second language learners were characterized by an integrative orientation to the second language learning, whereas the poor second language learner exhibited an instrumental orientation. Some of the latter even made statements to the investigator of this type: "Let the French Canadians keep their French." This negative attitude may be serving as a cognitive block in the acquisition of second language (Harvey, Hunt and Schroder, 1961).

The absence of a significant difference between good and poor second language learners on the Canadian version of Rokeach's Opinionation Scale, a scale which measures intolerance to belief systems of the individuals (Rokeach, 1960, p. 123), is difficult to interpret. The rationale of this scale and the high correlations between it and both the California F-Scale and Gough Sanford Rigidity Scale, could lead one to expect a difference on opinionation between good and poor learners. Probably a lesson that can be learned is one of caution, for those more successful in second language learning are not necessarily and consistently different in their personalities, from those who are less successful. The good learners are not always characterized by an absence of rigidity and ethnocentrism; nor are the poor learners necessarily rigid and opinionated.

The correlation between second language scores and SCAT scores was low (Pearson $r = .06$), thus indicating that, for the population studied, "college learning ability" is not associated with the acquisition of second languages.

California F-Scale scores and trials required for set extinction correlated negatively and significantly with second language test scores. It may be presumed that individuals who score high on these indices may have

difficulty with second language acquisition.

Significantly high correlations were obtained among the California F-Scale, the Gough Sanford Rigidity Scale, and the Opinionation Scale scores. These tests, therefore, may be a measure of a common factor related to a flexibility-rigidity dimension of personality.

The five general personality indices used in this study, when pooled together, can discriminate between the groups of good and poor second language learners.

SUGGESTIONS FOR FURTHER RESEARCH

One may replicate the present experiment using languages other than French, modalities for set fixation and set extinction other than the haptic one and non-social measures of rigidity such as Luchins' Einstellung test other than the Gough Sanford Rigidity Scale.

The integratively oriented individuals who are poor second language learners, and the instrumentally oriented individuals who are good second language learners bear further investigation. For these individuals, other variables appear to be operating.

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A P P E N D I C E S

APPENDIX A

STUDENT DATA QUESTIONNAIRE

Please complete the following:

1. Name: _____, _____
First Name Middle Name
2. I.D. No. _____
3. Sex: M _____ F _____
4. Name of the school in which you took Grade 12.
School _____
Town/City _____
5. Did you take French 30? Yes _____ No _____
6. Did you take any French
before coming to Gr. 10? Yes _____ No _____
7. Did you attend the same
school in Gr. 10,11,12? Yes _____ No _____
8. What was the name of your Grade 12 French teacher?

9. Your Gr. 12 Departmental marks in French 30 _____ %
10. Your average Grade 12 mark in the other five
subjects _____. (Please add
individual marks and find the average.)
11. Which one (or more) of the following best describes
your reasons for studying the French language?
 1. Usefulness in work situation.
 2. Enables one to gain friends more easily among French
speaking people.
 3. Because no one is really educated unless he is
fluent in the French language.
 4. To better understand the French way of life.
 5. One needs a good knowledge of at least one foreign
language to merit social recognition.

6. Because I hope to live in France some day.
7. I needed the training in French for credits.
8. To enable me to begin to think and behave as the French do.
9. Any other personal reason.

INSTRUCTIONS FOR:

THE CALIFORNIA F-SCALE

THE GOUGH SANFORD RIGIDITY SCALE

THE OPINIONATION SCALE CANADIAN VERSION

The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your PERSONAL OPINION. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreement just as strongly with others and perhaps undertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

On the Answer Sheet -- Mark each statement according to how much you agree or disagree with it. Please mark every one.

Circle +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

- +1: I agree a little.
- +2: I agree on the whole.
- +3: I agree very much.
- 1: I disagree a little.
- 2: I disagree on the whole.
- 3: I disagree very much.

APPENDIX B

THE CALIFORNIA F-SCALE

1. Obedience and respect for authority are the most important virtues children should learn.
2. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.
3. If people would talk less and work more, everybody would be better off.
4. The businessman and the manufacturer are much more important to society than the artist and the professor.
5. Science has its place, but there are many important things that can never possibly be understood by the human mind.
6. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.
7. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.
8. No sane, normal, decent person could ever think of hurting a close friend or relative.
9. Nobody ever learned anything really important except through suffering.
10. What the youth needs is strict discipline, rugged determination, and the will to work and fight for family and country.
11. An insult to our honor should always be punished.
12. Sex crimes, such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.
13. There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.
14. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked, and feeble-minded people.

15. Homosexuals are hardly better than criminals and ought to be severely punished.
16. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.
17. Every person should have complete faith in some supernatural power whose decisions he obeys without question.
18. Some people are born with an urge to jump from high places.
19. People can be divided into two distinct classes: the weak and the strong.
20. Some day it will probably be shown that astrology can explain a lot of things.
21. Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole world.
22. No weakness or difficulty can hold us back if we have enough will power.
23. It is best to use some prewar authorities in Germany to keep order and prevent chaos.
24. Most people don't realize how much our lives are controlled by plots hatched in secret places.
25. Human nature being what it is, there will always be war and conflict.
26. Familiarity breeds contempt.
27. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.
28. Nowadays more and more people are prying into matters that should remain personal and private.
29. The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.

APPENDIX C

THE GOUGH SANFORD RIGIDITY SCALE

1. I am often the last one to give up trying to do a thing.
2. There is usually only one best way to solve most problems.
3. I prefer work that requires a great deal of attention to detail.
4. I often become so wrapped up in something I am doing that I find it difficult to turn my attention to other matters.
5. I dislike to change my plans in the midst of an undertaking.
6. I never miss going to church.
7. I usually maintain my own opinions even though many other people may have a different point of view.
8. I find it easy to stick to a certain schedule, once I have started it.
9. I do not enjoy having to adapt myself to new and unusual situations.
10. I prefer to stop and think before I act even on trifling matters.
11. I try to follow a program of life based on duty.
12. I usually find that my own way of attacking a problem is best, even though it doesn't always seem to work in the beginning.
13. I am a methodical person in whatever I do.
14. I think it is usually wise to do things in a conventional way.
15. I always finish tasks I start, even if they are not very important.
16. I often find myself thinking of the same tunes or phrases for days at a time.

17. I have a work and study schedule which I follow carefully.
18. I usually check more than once to be sure that I have locked a door, put out the light, or something of the sort.
19. I have never done anything dangerous for the thrill of it.
20. I believe that promptness is a very important personality characteristic.
21. I am always careful about my manner of dress.
22. I always put on and take off my clothes in the same order.

APPENDIX D

THE OPINIONATION SCALE CANADIAN VERSION

1. It's just plain stupid to say that it was MacKenzie King who got us into the war.
2. A person must be pretty stupid if he still believes in differences between the races.
3. There are two kinds of people who fought Premier Douglas's socialization program: The selfish and the stupid.
4. A person must be pretty shortsighted if he thinks that the conservatives represent the best interests of the Canadian people.
5. It's the people who believe everything they read in the papers who are convinced that Russia is pursuing a ruthless policy of imperialist aggression.
6. It's mainly those who believe the propaganda put out by the real-estate interests who are against federal slum clearance program.
7. A person must be pretty gullible if he really believes that the Communists have actually infiltrated into government and education.
8. It's mostly those who are itching for a fight who want peace time conscription.
9. It is very foolish to advocate government support of religion.
10. Only a simple-minded fool would think that Senator McCarthy was a defender of American democracy.
11. It's perfectly clear that the decision to execute the Rosenbergs has done the United States more harm than good.
12. Any person with even a brain in his head knows that it would be dangerous to let the United States be run by men like General MacArthur.
13. The truth of the matter is this! It is big business which wants to continue the cold war.

14. Make no mistake about it! The best way to achieve security is for the government to guarantee jobs for all.
15. It's perfectly clear to all decent people that all this fuss about communism does more harm than good.
16. Thoughtful persons know that the Conservatives are not really interested in democracy.
17. It's perfectly clear to all thinking persons that the way to solve our financial problem is by soak-the-rich program.
18. It's all too true that the rich are getting richer and the poor are getting poorer.
19. History clearly shows that it is the private enterprise system which is at the root of depression and wars.
20. Anyone who's old enough to remember the depression of the thirties will tell you that it's a lucky thing Prime Minister Bennett was never re-elected.
21. It's simply incredible that anyone should believe that socialized medicine will actually help solve our health problems.
22. A person must be pretty ignorant if he thinks that Diefenbaker is going to let "big business" run this country.
23. It's the fellow travellers or Communists who keep yelling all the time about Civil Rights.
24. It's the radicals and labor racketeers who yell the loudest about labor's right to strike.
25. It is foolish to think that the N.D.P. Party is really the party of the common man.
26. You just can't help but feel sorry for the person who believes that the world could exist without a Creator.
27. It's usually the trouble-makers who talk about government ownership of public utilities.
28. Only a misguided idealist would believe that the Soviet Union is for peace.

29. It's mostly the noisy radicals who try to tell us that we will be better off under socialism.
30. It's the agitators and left-wingers who are trying to get Red China into the United Nations.
31. Any intelligent person can plainly see that the real reason Canada is spending so much for defense is to stop aggression.
32. Plain common sense tells you that prejudice can be removed by education, not legislation.
33. Anyone who is really for democracy knows very well that the only way for Canada to head off revolution and civil war in backward countries is to support the United States foreign policy.
34. History will clearly show that Diefenbaker's victory over the Liberal Party in 1957 was a step forward for the Canadian people.
35. The American rearmament program is clear and positive proof that they are willing to sacrifice to preserve their freedom.
36. This much is certain! The only way to defeat tyranny in China is to support Chiang Kai-Shek.
37. It's already crystal-clear that the United Nations is a failure.
38. A study of Canadian history clearly shows that it is the Canadian businessman who has contributed most to our society.
39. Even a person of average intelligence knows that to defend ourselves against aggression we should welcome all help -- including Franco Spain.
40. Anyone who knows what's going on will tell you that those who favor communism are traitors to their country.

APPENDIX E

CALIFORNIA F-SCALE

GOUGH SANFORD RIGIDITY SCALE

OPINIONATION SCALE CANADIAN VERSION

SCORE SHEET

1.	-3	-2	-1	+1	+2	+3	12.	-3	-2	-1	+1	+2	+3
2.	-3	-2	-1	+1	+2	+3	13.	-3	-2	-1	+1	+2	+3
3.	-3	-2	-1	+1	+2	+3	14.	-3	-2	-1	+1	+2	+3
4.	-3	-2	-1	+1	+2	+3	15.	-3	-2	-1	+1	+2	+3
5.	-3	-2	-1	+1	+2	+3	16.	-3	-2	-1	+1	+2	+3
6.	-3	-2	-1	+1	+2	+3	17.	-3	-2	-1	+1	+2	+3
7.	-3	-2	-1	+1	+2	+3	18.	-3	-2	-1	+1	+2	+3
8.	-3	-2	-1	+1	+2	+3	19.	-3	-2	-1	+1	+2	+3
9.	-3	-2	-1	+1	+2	+3	20.	-3	-2	-1	+1	+2	+3
10.	-3	-2	-1	+1	+2	+3	21.	-3	-2	-1	+1	+2	+3
11.	-3	-2	-1	+1	+2	+3	22.	-3	-2	-1	+1	+2	+3

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